Name: _____
A2 Q3T3 Review

Be sure to study your notes and homework assignments!

1) If $f(x) = 3x - 1$ and $g(x) = 4x + 3$, what does $g(f(x))$ equal?

A) $12x + 8$ C) $12x - 1$

B) $12x^2 + 5x - 3$ D) $12x^2 + 13x - 3$

2) If $g(x) = \sqrt{x}$ and $h(x) = x^3 - 1$, then $g(h(4))$ equals

A) $\sqrt{63}$ B) 5 C) $\sqrt{11}$ D) 7

3) If $f(x) = \frac{2}{x+3}$ and $g(x) = \frac{1}{x}$, then $(g \circ f)(x)$ is equal to

A) $\frac{x+3}{2x}$ B) $\frac{1+3x}{2x}$ C) $\frac{x+3}{2}$ D) $\frac{2x}{1+3x}$

4) If $g(x) = x + 3$ and $f(x) = x^2 - 2$, find the value of $g(f(3))$.

5) If $g(x) = x + 3$ and $f(x) = x^2 - 2$, find the value of $f(g(a + 2))$.

6) If $f(x) = x - 3$ and $g(x) = x^2$, find the value of $(f \circ g)(2)$.

7) The function $f(x) = \frac{1}{x-3}$ is defined for *all* real numbers except when x equals

A) $-\frac{1}{3}$ B) 3 C) 0 D) -3

8) The function $f(x) = \sqrt{x-4}$ is real for what values of x?

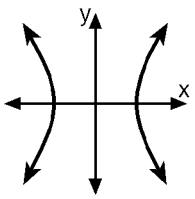
A) $\{x \mid x < 0\}$ B) $\{x \mid x \geq 4\}$ C) $\{x \mid x > 0\}$ D) $\{x \mid x \leq 4\}$

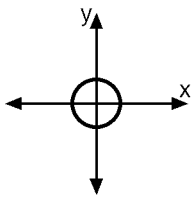
9) The domain of the real-valued function $f(x) = \frac{1}{\sqrt{x-3}}$ contains which of the following numbers?

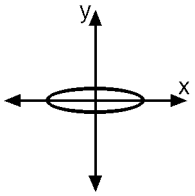
A) -1 B) 2 C) 3 D) 7

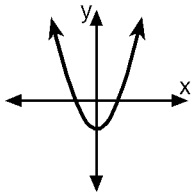
10) What is the domain of $f(x) = \frac{1}{\sqrt{4-x^2}}$?

11) Which graph illustrates a quadratic relation whose domain is *all* real numbers?

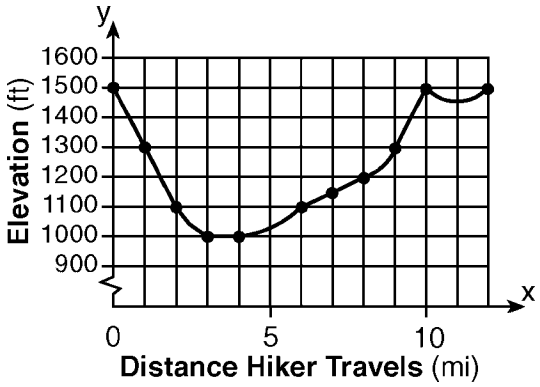
A) 

C) 

B) 

D) 

12) The accompanying graph shows the elevation of a certain region in New York State as a hiker travels along a trail.



What is the domain of this function?

A) $\{x \mid 0 \le x \le 12\}$

B) $\{y \mid 1{,}000 \le y \le 1{,}500\}$

C) $\{x \mid 1{,}000 \le x \le 1{,}500\}$

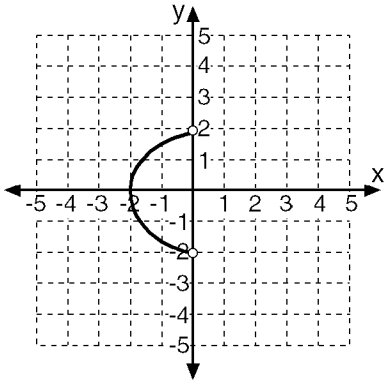
D) $\{y \mid 0 \le y \le 12\}$

13) For the graph of the relation below:

(**a**) State the domain.

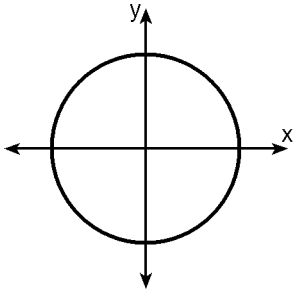
(**b**) State the range.

(**c**) State whether or not the relation is a function. [*Justify your answer.*]

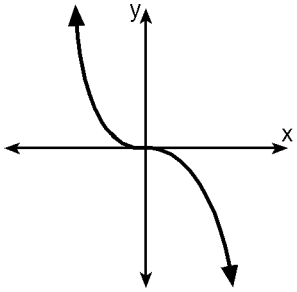


14) Which diagram represents a one-to-one function?

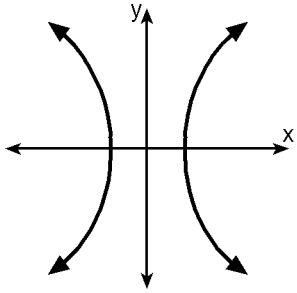
A)



B)



C)



D)